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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,157	05/09/2001	Yasuo Suzuki	35.C15343	2510

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EXAMINER

PHAM, HAI CHI

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 04/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/851,157

Applicant(s)

SUZUKI ET AL.

Examiner

Hai C Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11, 15-20 and 23-33 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 11, 15-20 and 23-33 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Preliminary-Amendments

1. The office action dated August 5, 2003 was issued during the three-month suspension of action, therefore, the rejection in that action is withdrawn.
2. The following action on the RCE filed on 05/30/03 is based on the latest Supplemental Preliminary Amendment filed on November 4, 2003.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 33 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - Claim 33 recites the following limitation "the number of said optical boxes is two", which appears to be conflicting with the limitation set forth in claim 18 from which claim 33 is ultimately dependent. Indeed, each optical box is defined in claim 20 as containing the single deflecting means, the mirrors and the plurality of lenses; therefore claim 33 implies that two deflecting means would be included in the image forming apparatus, which, as recited in the base claim 18, only includes a single deflecting means.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 11, 15-17, 23-26, and 30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakashima et al. (U.S. 5,652,611).

With regard to claims 11, 23, 30-31, Nakashima et al. discloses an optical scanning system comprising a light source (laser diode 1), rotational deflecting means (polygon mirror 4) for deflecting light emitted from said light source, a mirror (reflection mirror 22) for reflecting the light deflected by said deflecting means, an image bearing member (photosensitive drum 6) onto which the light reflected by said mirror is irradiated, and a plurality of lenses (correction lens 5 that can be configured as a plurality of lenses) (col. 9, lines 62-67) for directing the light deflected by said deflecting means onto said image bearing member so as to form an image, wherein in an optical path along which the light deflected by said deflecting means is directed toward said image bearing member, said plurality of lenses are provided on a downstream side of said mirror (Fig. 1).

With regard to claims 15-17 and 24-26, Nakashima et al. further teaches:

- the plurality of lenses being scanning lenses (lens 5 having f- θ characteristic) (col. 9, lines 15-21),

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- said deflecting means (4) including a polygonal mirror (Fig. 1) having a reflecting surface, and one of said plurality of lenses corrects an inclination of the reflecting surface of said polygonal mirror (col. 9, lines 5-14),
- only said mirror, and no other mirror, is arranged in the optical path (Fig. 1).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 11, 18, 20, 23, 27-29, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagasaka et al. (U.S. 6,313,906) in view of Nakashima et al.

Nagasaka et al. discloses a multi-beam scanning device comprising a plurality of light sources (laser diodes 51), a single deflecting means (a single polygon mirror 55) for deflecting light emitted from said plurality of light sources, a mirror (reflection mirrors 57) for reflecting the corresponding light deflected by said deflecting means, a corresponding image bearing member (photosensitive drums 61) to which the light reflected by said mirror is irradiated, and a plurality of lenses (imaging lenses 56 and 59) for image-forming the light reflected by said mirror onto said image bearing member. Nagasaka et al. further teaches separate sets comprising a said mirror (57 for each color YMCK), a said plurality of lenses (56, 59 for each color YMCK) and a said image

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bearing member (photosensitive drum 61 for each color YMCK) being arranged with respect to each of said plurality of light sources.

Nagasaka et al. also discloses one (lens 59) of the plurality of lenses being provided on a downstream side of said mirror, but fails to teach all the plurality of the scanning lenses being provided on a downstream side of said mirror.

However, Nakashima et al. discloses an optical scanning system in which plural scanning lenses (5) are provided on a downstream side of the reflecting mirror (22) along the optical path from the polygon mirror (4) to the photosensitive drum (6).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Nagasaka et al. with the aforementioned teaching of Nakashima et al. The motivation for doing so would have been to allow the exposure beam to be accurately focused on the surface to be scanned as well as to correct the curvature field in the primary scanning direction.

With regard to claims 20, 28, 29, 32, Nagasaka et al. further discloses an optical box (50) for containing the deflecting means, the reflecting mirror and the scanning lenses, the deflecting means being a polygonal mirror.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagasaka et al. in view of Nakashima et al., as applied to claims 11 and 18 above, and further in view of Koide (U.S. 5,251,055).

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Nagasaka et al., as modified by Nakashima et al., discloses all the basic limitations of the claimed invention except for the neighboring ones of the mirrors being the same as a pitch between neighboring ones of the image bearing members.

Koide discloses an image forming apparatus having a similar structure as that of Nagasaka et al., the apparatus includes a plurality of light beams being deflected by a single polygon mirror (27, Fig. 4), corresponding reflecting mirrors (51-54), scanning lens units, and corresponding image bearing bodies, wherein the neighboring ones of the reflecting mirrors (pairs 51-52 and 53-54) being the same as a pitch between neighboring ones of the image bearing members (pairs C1-C2 and C3-C4 where the image bearing members are located) (Fig. 4) (See also Fig. 5 regarding the disposition of the reflecting mirrors 71-74 and corresponding image bearing members located at D1-D4).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to rearrange the deflecting mirrors and image bearing members as taught by Koide in the modified device of Nagasaka et al. since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HAI PHAM
PRIMARY EXAMINER

April 21, 2004